



ARIZONA PASSENGER RAIL CORRIDOR STUDY

Tucson to Phoenix

Draft Tier 1 Environmental Impact Statement

September 2015



Submitted to:



U.S. Department of Transportation
Federal Railroad Administration

Submitted by:

Arizona Department of Transportation
Multimodal Planning Division

ARIZONA PASSENGER RAIL CORRIDOR STUDY: TUCSON TO PHOENIX

Tier 1 Draft Environmental Impact Statement

Submitted pursuant to 23 CFR 771, 16 U.S.C. 470(f), 33 U.S.C. 1251,
42 U.S.C. 4332(2)(c), 49 U.S.C. 303, and 49 U.S.C. 1601 *et seq.*

FRA will issue a single document that consists of the Final Environmental Impact Statement and Record of Decision pursuant to Pub. L. 112-141, 126 Stat. 405, Section 1319(b) unless FRA determines that statutory criteria or practicability considerations preclude issuance of such a combined document.

prepared by

Federal Railroad Administration

and

Arizona Department of Transportation

in cooperation with

Federal Transit Administration

Federal Highway Administration

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Abstract

This Draft Tier 1 Environmental Impact Statement (EIS) evaluates intercity and commuter passenger rail service between Tucson and Phoenix in Pima, Pinal, and Maricopa counties, Arizona. Two Corridor Alternatives for implementing a passenger rail system and a No Build Alternative are evaluated. The No Build Alternative would not include a high-capacity transportation facility between the two metropolitan areas.

A passenger rail system in one of two corridor alternatives would provide intercity and commuter rail service and would require construction of new tracks and facilities, possibly including Union Pacific Railroad tracks or right-of-way. Passenger rail as a transportation option between these cities and communities in between would reduce travel times and improve service reliability. This Draft Tier 1 EIS discusses the potential effects of a passenger rail system on land use, socioeconomic conditions, environmental justice, public health and safety, parklands, Section 4(f) and Section 6(f) resources, air quality, noise and vibration, hazardous materials, geology and topography, biological resources, water resources, energy use and climate change, visual and scenic resources, and cultural resources.

The comment period during which the Draft Tier 1 EIS can be reviewed and comments can be made will end on October 30, 2015. The following persons may be contacted for additional information concerning this document:

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Review and Comment

After reading the Draft Tier 1 EIS, please provide specific written comments. Comments on the contents of the EIS may be e-mailed to projects@azdot.gov, given in person at the hearings (see below), in writing through the project website, www.azdot.gov/passengerrail/, or by fax or mail. All comments are due by October 30, 2015. Comments should be sent to:

ADOT Passenger Rail Study Team

24 W. Camelback Road, Suite 479
Phoenix, AZ 85013
FAX: 602.368.9645

Public Hearings

Public hearings on the Draft Tier 1 EIS will be held on September 15, 16, and 17, 2015 from 5:30 p.m. to 7:00 p.m., with video presentations beginning at 5:45 p.m. and 6:20 p.m. The same information will be presented at each location:

Tuesday, September 15

Burton Barr Branch Phoenix Public Library
First Floor Pulliam Auditorium
1221 North Central Avenue
Phoenix, AZ 85004

Wednesday, September 16

Tucson Convention Center
Leo Rich Theater
260 South Church Avenue
Tucson, AZ 85701

Thursday, September 17

Central Arizona College
Signal Peak Campus, Room M101
8470 North Overfield Road
Coolidge, AZ 85128

Document Availability

In addition to viewing online on the project website, www.azdot.gov/passengerrail/, the Draft Tier 1 EIS can also be reviewed at the following locations:

Burton Barr Branch

Phoenix Public Library
1221 North Central Ave.
Phoenix, AZ 85004

Downtown Branch

Chandler Public Library
22 South Delaware Street
Chandler, AZ 85225

ADOT Research Library

206 South 17th Ave.
Phoenix, AZ 85007

Pima Community College Northwest Campus Library

7600 North Shannon Road
Tucson, AZ 85709

Central Arizona College Signal Peak Campus Library

8470 North Overfield Road
Coolidge, AZ 85128

Southeast Regional Library – Gilbert

775 North Greenfield Road
Gilbert, AZ 85234

Preface

The Arizona Department of Transportation, through numerous planning studies, has identified the corridor defined by Phoenix and Tucson, the state's two most populous metropolitan areas, for investigating potential passenger rail service in the state. This Draft Tier 1 Environmental Impact Statement (EIS) documents the potential environmental effects of constructing and operating a passenger rail system within alternative corridors considered in the Arizona Passenger Rail Corridor Study (APRCS), which was undertaken to investigate faster and more reliable travel modes between these two cities and intervening points.

The Tier 1 EIS is one of three documents created to satisfy the project planning requirements of the lead agencies for the APRCS. The Federal Railroad Administration and Federal Transit Administration are the co-lead agencies for the Tier 1 EIS. In accordance with the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 *et seq.*, the EIS looks at the effects that constructing and operating a passenger rail system would have on the natural, built, and social environment. It examines several alternative solutions developed to meet a recognized transportation need, so that decision makers can compare the environmental effects of two corridor alternatives and the No Build Alternative. The other deliverables of the APRCS, an Alternatives Analysis (AA) and a Service Development Plan (SDP), examine planning, operational, and funding issues in greater detail than normally reported in an EIS.

Rather than examine the effects of a project with a specific alignment and station locations, this document describes the affected environment and potential environmental consequences of a passenger rail system within corridor alternatives, each extending up to 1.0 mile in width. It considers the environmental context of each corridor alternative, relative to the intensity of effects anticipated from construction and operation of the proposed rail system. The EIS discloses both what is known and, to the extent practicable, what is not known about resources in the area, based on readily available data. The analysis discusses benefits as well as adverse impacts of implementing a rail system within each corridor alternative and of taking no action.

This Draft Tier 1 EIS is being circulated for public review and comment and will be updated and finalized as part of the NEPA process in response to comments received. After the Final Tier 1 EIS is published, the study's co-lead agencies will issue a Record of Decision, either opting for the No Build Alternative or granting environmental clearance for further project development within a selected corridor.

If a corridor alternative is selected, one or more design and construction projects for a rail system will undergo Tier 2 environmental analysis in later phases. A Tier 2 NEPA document will identify project-specific impacts and provide requirements for mitigating those impacts, allowing a project to be constructed.

Introduction

The Arizona Department of Transportation's (ADOT) current study of methods to move passengers between the cities of Tucson and Phoenix builds on work that ADOT and other agencies have undertaken in recent years. Because any project or projects resulting from this study would likely use federal funds, this Tier 1 Environmental Impact Statement (EIS) was prepared to satisfy the requirements of NEPA. NEPA requires federal agencies to consider the environment in their planning and decision-making through a systematic, interdisciplinary approach. Federal agencies assess the environmental impact of proposed actions and alternatives with the potential for significant effects on the environment.

This Tier 1 EIS was prepared in conjunction with a New Starts-compatible Alternatives Analysis (AA), to satisfy the Federal Railroad Administration's (FRA) approach to selecting an alternative for implementation. New Starts is a capital investment grant program administered by FTA for new and expanded rail, bus rapid transit, and ferry systems in key corridors. A "Tier 1" EIS examines alternative corridors, rather than specific alignments, to guide decision-making, encourage coordination between agencies and jurisdictions, preserve right-of-way, and identify funding opportunities for future infrastructure projects. Taken together, the combined deliverables from the Arizona Passenger Rail Corridor Study (APRCS) provide the requisite analysis and preliminary engineering to complete an AA for FTA New Starts, along with a Tier 1 EIS and Service Development Plan for FRA.

Two different transportation needs—intercity connectivity and commuter mobility—have been identified, and two federal agencies are funding the APRCS. FRA is the designated lead agency and FTA is a cooperating agency for the EIS, with ADOT serving as the sponsoring agency. Each federal agency has its own process for moving a proposed project from an array of possible alternatives to a single alternative, although both fulfill the environmental evaluation principles stipulated by NEPA. The APRCS follows a process designed to meet both agencies' requirements for identifying a preferred alternative that would provide opportunities for intercity connectivity between Tucson and Phoenix while enhancing commuter mobility within the same study area.

Study Location

Arizona, in the southwestern United States (US), is the sixth largest state in area and fifteenth most populous. Future growth anticipated within Arizona's 114,000 square miles, however, can only take place within private developable land. Seventy (70) percent of Arizona is either public land managed by the Bureau of Land Management or Bureau of Reclamation or protected parkland, tribal land, or military facilities. State Trust land administered by the Arizona State

Land Department (ASLD) makes up another 13 percent and has the potential for future development, leaving only 17 percent of the state as private developable land.

Most of that area where growth could occur lies within a megaregion—a network of metropolitan areas that share environmental characteristics, infrastructure, economic linkages, development patterns, culture, and history—known as the Sun Corridor, where 86 percent of the state’s population already resides. This megaregion extends northwest beginning in the south at Nogales, through Tucson and Phoenix, and up to Prescott. Over the last decade it has been one of the fastest growing areas in the country.

At the heart of the Sun Corridor lie three counties—Pima, Pinal, and Maricopa—containing Arizona’s two largest cities, Tucson and Phoenix, and the developing region in between. For the APRCS, this most populous area of the state, which also happens to be the area where future growth is most likely to occur, was deemed most appropriate to be selected as the study area. This three county study area is strategic not only on a state level but also on a regional level. Phoenix is the sixth largest city in the US, in both population and land area. It is the only US city with a population above 1 million that is not served directly by a passenger rail system. Planned increases in vehicle carrying capacity on the study area roadway network are constrained by environmental and jurisdictional issues, while regional growth is projected to outpace and exceed the roadway network’s planned optimum capacity.

Draft Tier 1 EIS Contents

As rail becomes more prominent as a high-capacity transportation alternative to automobile travel, transportation planners and agencies are considering the possibility of passenger rail connections within the study area and to cities in neighboring states. Southwestern cities such as Las Vegas, San Diego, Los Angeles, Albuquerque, and El Paso could potentially forge additional rail connections as part of a regional rail network serving Tucson and Phoenix. A more detailed description of the transportation problem prompting this Study is contained in **Chapter 1, Purpose and Need**.

The corridor alternatives examined in this Draft Tier 1 EIS were selected from a broad range of alternatives potentially meeting the purpose and need for a high-capacity transportation connection. The extensive process by which these preliminary alternatives were narrowed is described in detail in **Chapter 2, Alternatives Considered**.

Chapter 3, Public and Agency Coordination outlines the extensive outreach efforts that ADOT and the co-lead agencies have conducted in conjunction with identifying the purpose and need for the study and developing alternative transportation solutions. This coordination is ongoing as the Draft Tier 1 EIS is circulated for a 45-day review and comment period and public hearings are held as part of the NEPA process.

Train and automobile trip durations, passenger service frequency scenarios, and conceptual rail station locations and their associated impacts on transportation within the region, along with the transportation impacts of the No Build alternative, are explored in **Chapter 4,**

Transportation Impacts.

Many aspects of the natural, social, and built environment could be affected, either positively or adversely, both by building and operating a passenger rail system within the corridor alternatives, and by *not* building one. These are methodically examined in **Chapter 5, Existing Conditions and Environmental Consequences**, following guidance established by the study's federal co-lead agencies for implementing NEPA. As stated above, the analysis of potential environmental effects is reported at a corridor-level in this Draft Tier 1 EIS.

Chapter 6, Cost Analysis, provides capital and operation/maintenance cost estimates for a passenger rail system. Costs were estimated at a corridor level to provide decision-makers with order-of-magnitude information on the potential cost of building, operating, and maintaining a passenger rail system within the corridor alternatives.

Information contained in the APRCS AA, as well as in prior chapters of this Draft Tier 1 EIS, is distilled and summarized in **Chapter 7, Comparison of Alternatives**. This chapter compares the three alternatives' potential performance with respect to environmental impacts, financial feasibility, ease of implementation, and operating characteristics and utilizes this information to identify a preferred alternative.

Chapter 8, Next Steps, outlines the further steps ADOT and the co-lead agencies would have to take to complete the Tier 1 NEPA review process and advance the APRCS into conceptual design of one or more operable segments of a passenger rail system that could be developed as individual projects. Subsequent Tier 2 NEPA documentation involving more detailed technical analysis of environmental conditions, impacts, and mitigation, would be undertaken at the project level if one of the corridor alternatives is selected.

The **appendices** for this Draft Tier 1 EIS contain background data and technical information. Appendix titles have been arranged alphabetically and correspond either to the name of an environmental resource section in **Chapter 5**, or to an EIS chapter. An exception to this is the *Corridor Aerial Atlas Appendix*, consisting of 91 annotated aerial maps of the 1-mile-wide Yellow and Orange corridor alternatives over their entire length, from the southern hub in Tucson to the northern hub in Phoenix.

References in the EIS text to chapters, figures, tables, or sections within the EIS appear in bold type, while appendix names are italicized, and appendix tables and figures are indicated in plain type.